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ANALYSIS OF INCOME INEQUALITY AND POVERTY DYNAMICS AMONG RURAL FARM HOUSEHOLDS IN ABIA STATE, NIGERIA

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Abstract

The study analyzed income inequality and poverty dynamics among rural farm households in Abia State, Nigeria. Beyond the broad objective, the study sought specifically to estimate the income distribution and determine the poverty line, gap and incidence of the rural farm households. A total of 240 households were selected across the agricultural zones using multistage sampling technique from which data and information were elicited. Data collection was between 2010 and 2011. Analytically, the study employed Gini coefficient in the estimation of income distribution while poverty indicators (Mean household income, headcount ratio and poverty gap index) were used to measure poverty line, poverty incidence and gap. Income distribution showed high level of inequality (Gini index = 0.987) with per capita income falling below the operational national minimum wage. The poverty gap and incidence gave a scary picture of worsening poverty situation, judging from the poverty indicators (head count index = 0.567; poverty gap = 0.568). To reverse the trend, it is important that concerted efforts are made by way of policy direction to ensure that the rural economy which is largely agrarian is improved. This can be achieved by adopting input subsidy, private sector driven market access policy, labour intensive techniques in execution of public projects among others

Keywords: *Income inequality, poverty, farming, rural households*

1. Introduction and Background

The vagaries of income distribution have been a subject of immense concern to economists for a long time. This is because high level of income inequality produces an unfavourable environment for economic growth and development (British Council, 2012). Previous studies have shown that income inequality has risen in many developing countries in the last two decades, creating pockets of poverty situation across the globe (Clarke *et al*, 2003; Addison and Cornia, 2001).

Poverty in all its forms has blighted Nigerian society for generations. Although there have been a multiplicity of programmes and projects with poverty reduction mandate implemented over the years, it

appears they were tinkering at the edges rather than the root causes of poverty since its incidence and severity had continued to deepen (Nwachukwu and Ezeh, 2007). Nigeria is a country with the largest population on the African continent, some 162.5 million people. Of this magnitude, 49% are female representing some 80.2 million while outstanding 51% are male. It is among the thirty most unequal countries in the world with respect to income distribution while the poorest half of the population holds only 10% of national income (British Council, 2012; Idowu *et al.*, 2011).

More disturbing is the fact that 54% of Nigerians still live in poverty and the proportion has doubled since 1980 (when about 28% were classified as poor). Human development indicators are also worse than those of comparable lower middle-income countries; 42% of Nigerian children are malnourished. The averages hide a context that is worse for women and girls. Nearly six million young women and men enter the labour market each year but only 10% are able to secure a job in the formal sector, and just one third of these are women (British Council, 2012). The average poverty incidence in Nigeria increased from 0.28 to 0.42 between 1980 and 1992 respectively and by 1996, the situation worsened to an average of 0.66. By implication, out of every 100 Nigerians, 66 were dwelling below the poverty line with great difficulties (NAPEP, 2006; Nwachukwu and Ezeh, 2007).

On the basis of surveys on poverty by Federal Office of Statistics (1994), the nature of poverty in Nigeria is overwhelmingly a rural problem. This is substantiated by the fact that majority of Nigerians (about 65%) live in the rural areas and are mostly farmers. Hence, the plethora of policies and programmes with poverty reduction mandate have been put in place to improve the productivity and income earning potentials of farmers in the rural areas. They include the Agricultural Development Programmes (ADPs); the River Basin Development Authorities (RBDAs); the Directorate of Food, Roads and Rural Infrastructure (DIFRRI); the National Agricultural Land Development Authority (NALDA); the National Fadama Development Programme (NFDP); the National Agricultural Technology Support Project (NATSP); the National Japanese – Assisted Rice Production Programme; the IFAD – Assisted Cassava Multiplication Programme; the National Accelerated Industrial Crop Storage and Post Harvest Technology Programme (NAICP) and other Programmes aimed at boosting agricultural output include Crop Storage and Post Harvest Technology Programme; the National Seed Service Programme; the Plant Quarantine Service Programme; the Strategic Grain Reserve Programme; the National Livestock Development Research Project (NARP); the Rinderpest Control Programme; the Aquaculture Development Project and the technical and resource support of the United Nations Agencies especially, UNDP and FAO (Odebo, 2012).

These programmes seemed to have failed in achieving their mandate since the poverty situation has not improved tremendously even in the face of continued injection of government and donor agencies' funds and changing strategies. More so, the poverty situation in Abia state by a prior national research portrayed a scenario of low dependency ratio, undesirable household economic welfare and pathetic self – classified poverty assessment. According to the Core Welfare Indicator Questionnaire Survey of NBS (2006), the overall dependency ratio of Abia state was 0.6, indicating that at least six persons were dependent on each economically active person. Over 50 per cent of the state indigenes felt that their economic situation was worse than it was a year ago while 75 per cent classified themselves as poor. Hence, the need to articulate this study became imperative with aim of analyzing the income inequality and poverty dynamics of the rural farm households in Abia state, Nigeria. It is important to understand where we are as a state in terms of poverty after implementing numerous poverty alleviation programmes. Specifically, the study sought to:

- estimate the income distribution among the households;
- determine the poverty line, gap and incidence in the area;
- make policy recommendations based on the findings.

2. Methodology

2.1. The Study Area

The study was conducted in Abia State. The State is located within the Southeastern Nigeria and lies between Longitude $04^{\circ} 45'$ and $06^{\circ} 07'$ North and Latitude $07^{\circ} 00'$ and $08^{\circ} 10'$ East. Abia State is bounded by Imo State at the Western border; Ebonyi and Enugu States at the North; Cross River and Akwa – Ibom States at the East and Rivers State at the South. Its population stood at about 2,883,999 persons with a relatively high density at 580 persons per square kilometer (NPC, 2007); (Rotary International (2006).

Abia State is divided into administrative blocks called Local Government Areas which is grouped into three (3) agricultural Zones namely Ohafia, Umuahia and Aba Zones. In terms of occupation, about 70% of Abians are farmers and have the potentials for the production of crops (both arable and permanent), livestock, fish and also engage in food processing (ABSG, 1992).

2.2. Sources of Data

The study obtained data from primary sources. The primary data were collected with the use of pre-tested and structured questionnaire administered on rural households. These include socio – economic characteristics, primary and secondary livelihood sources; income accruing from them etc. Other relevant information were obtained from secondary sources such as literature, local government areas, agricultural institutions and the internet.

2.3. Method of Data Collection

The study applied multistage sampling technique in the selection of farm households from the agricultural zones of Abia State (Ohafia, Umuahia and Aba). In stratum one, 2 local government areas each were selected randomly from the zones (ie 6 LGAs). The second stratum involved random selection of 2 communities each from the 6 LGAs, set aside for the research (ie 12 communities). The last stratum entailed selection of 20 households each from the communities, giving a sample size of 240 farm households. For the purposes of social inclusiveness, male and female – headed households were selected. Focus group discussions were used to collect community level data for complementing household - level data. The data collection was 2010 – 2011.

2.4. Analytical Procedure

In analyzing the data, Gini Coefficient was employed in the assessment of income inequality. To determine the poverty line, gap and incidence, the mean income of the sample was taken as the poverty line; Poverty gap index was computed to estimate the poverty gap while head count ratio was used to address poverty incidence.

2.5. Model Specification

For the purposes of estimating income distribution, the study employed Gini Coefficient and stated thus:

$$G = 1 + \sum_{i=0}^{k-1} (Y_{i+1} + Y_i) (X_{i+1} - X_i) \quad (1)$$

Where Y = Cumulated Proportion of the income variable

X = Cumulated Proportion of the population variable

G = Gini Coefficient

The Gini Coefficient formula proposed above is in line with Wilson *et al* (2010); Madu (2006); Damgaard and Weiner (2000); Brown (1994). In estimating the extent of poverty (poverty incidence), the headcount ratio was used according to Ayobatele and Amudipe (1999); Ezeh and Nwachukwu (2010).

$$H = q/n \quad (2)$$

Where H = Headcount ratio (Poverty incidence)

q = Number of poor rural farm households (those below the poverty line)

n = Total number of rural farm households

Poverty gap index usually measures poverty depth and in this study, the following formula was adopted:

$$I = \left[\frac{Z-Y}{Z} \right] \quad (3)$$

Where I = Poverty Gap

Z = Poverty line estimated using mean household income

Y = Average income of the poor rural farm households

3. Results and Discussion

3.1. Estimation of Income Distribution

In estimating the income distribution of the households, Gini coefficient was computed and the result presented in Table 1. It could be observed that majority of the households representing 41.25% of the total sample earned monthly income that fell within ₦1000 – ₦30, 999 bracket. This was followed closely by 37.08% which received between ₦31, 000 and ₦60, 999 on a monthly basis. With a mean income of ₦42, 129.23 it implies that 56.67% earned less than the average income. Using the national average of 6 persons per household, it means that per capita income in the area is ₦7, 021.54. This is below the approved ₦7, 500 national minimum wage operational in the country.

Furthermore, the Gini coefficient is 0.987 and it reflects the level of inequalities in income distribution. The value of 0.987 indicates that there is a very high level of inequality in income distribution. This is comparable with Gini coefficients of 0.449 and 0.488 for Southeast and Nigeria respectively as reported by NBS (2005) and Aigbokhan (2008). This shows that Abia State has not done well in addressing income inequality among the populace. Invariably, the gap between the rich and the poor is still very wide.

Table 1. Distribution of Income Distribution among Households

Income per month (₦)	No. of Households	Percentage Distribution (%)
1,000 – 30,999	99	41.25
31,000 – 60,999	89	37.08
61,000 – 90,999	37	15.42
91,000 – 120,999	12	5.00
121,000 – 150,999	3	1.25
Total	240	100
Mean Income/mth		₦42, 129.83
Gini Coefficient		0.987

Source: Field Survey Data, 2011

NB: 1\$ = ₦150

3.2. Determination of the Poverty Line, Gap and Incidence

To address the poverty indices, the study employed the mean income per month, poverty gap index and head count ratio to measure poverty line, poverty gap and poverty incidence respectively. This is similar to Ezeh and Nwachukwu (2010) and Idowu *et al* (2011) who conducted a related study in Imo State (Southeast) and Southwest of Nigeria respectively. The result of the indices is presented in Table 2. The household poverty line is ₦42, 129.23 while per capita poverty line is ₦7, 021.54 using the national average household size of 6 persons. This is similar with those of rural dwellers in Imo State in 2009 that were reported to have a poverty line of ₦7, 908.42 by Ezeh and Nwachukwu (2010).

The poverty gap posted a value of 0.568. This can be compared with the poverty gap index of 0.12 for Southeastern geographical zone in 2004 reported by Omonona (2010). This shows that the rural households in Abia State, Nigeria have moved further away from the poverty line between 2004 and 2011.

Poverty incidence, measured by the head count index recorded a value of 0.567. This indicates that 56.7% of the households cannot afford to buy a basic basket of goods. Comparing with the poverty incidence of 26.7% for Southeast in 2004 as reported by Aigbokhan (2008), it could be deduced that the poverty scenario has worsened by 30% between 2004 and 2011 in the state.

Table 2. Estimates of Poverty Line, Gap and Incidence

Poverty Variables	Estimates
Poverty Line (Average Income)	₦42, 129.83
Head Count Index (Poverty Incidence)	0.567
Poverty Gap	0.568

Source: Computed from Field Survey Data, 2011

NB: 1\$ = ₦150

4. Conclusion

The persistence of poverty in Abia State has been a challenging problem. Evidences given by the poverty indicators create very scary poverty scenario and have explained the wide gap between the rich and the poor in the state. The research employed innovative and dependable methodology by a few studies in other places in its analysis which makes the study the first of its kind in the area in recent times. Having found that the poverty situation of Abians have worsened since the last national poverty survey in 2004, it is important that concerted efforts are made by way of policy direction to ensure that the rural economy is improved economically. It is necessary because the rural areas are home to majority of Nigerians who are largely farmers and vast natural resources. This can be achieved by subsidization of their farm inputs cost (input subsidy); enhancing farmers' access to markets which will be private sector driven (market access policy); public projects execution should be targeted to rural areas and largely labour intensive to engage more people as well as reduce double digit unemployment rate etc.

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References

- Abia State Government (ABSG) (1992). *Abia In Brief*. Published by the Abia State Government Press, Government House, Umuahia, Nigeria. Pp. 1- 3.
- Addison, T. & G.A. Cornia (2001). Income Distribution Policies for Faster Poverty Reduction. UNU – WIDER Discussion Paper No. 2001/9, World Institute for Development Economic Research, Helsinki.
- Aigbokhan, B.E. (2008). Growth, Inequality and Poverty in Nigeria. A CGS/MPAMS Discussion Paper No. 3, United Nations Economic Commission for Africa (UNECA), Addis Ababa, Ethiopia.
- Awoyemi, T.T. (1999). Gender Analysis for Sustainable Agriculture: The Case of Owerri Agricultural Zone of Imo State, Nigeria. M.Sc Thesis, University of Ibadan, Nigeria.
- Ayalew, W., J.M. King, E. Burns & B. Richkowsky (2003). Economic Evaluation of Small holder Subsistence Livestock Production: Lessons from an Ethiopian Goat Development Programme. *Ecological Economics*, 45(3): 473 – 485.
- Ayobatele, J.T. & B.A. Amudipe (1999). Poverty Profile of Working Women in Akure North and South LGAs of Ondo State, Nigeria: Poverty Alleviation and Food Security in Nigeria. Nigerian Association of Agricultural Economists (NAAE), Ibadan, Nigeria.
- British Council (2012). Gender in Nigeria Report: Improving the Lives of Girls and Women in Nigeria, 2nd Edition, British Council, Nigeria. Website: <http://www.britishcouncil.org/ng/gender2012>
- Brown, M. (1994). Using Gini-Style Indices to Evaluate the Spatial Patterns of Health Practitioners: Theoretical Considerations and an Application Based on Alberta Data. *Social Science Medicine*, 38: 1243–1256.
- Clarke, G., L. Colin & X.H. Zou (2003). Finance and Income Inequality: Test of Alternative Theories, World Bank Policy Research Working Paper 2984, Washington D.C., World Bank.
- Damgaard, C. & J. Weiner (2000). Describing Inequality in Plant Size or Fecundity, *Ecology*, 81: 1139-1142.
- Ezeh, C.I. & I.N. Nwachukwu (2010). Micro Level Impact of National Fadama 11 Project on Rural Poverty in Imo State, Nigeria. *African Journal of Food, Agriculture, Nutrition and Development*, 10(9): 4016 – 4031.
- Federal Office of Statistics (FOS)(1994). National Consumers Survey. 1985/86 1992/93.FOS publication

- Lagos, Nigeria
- Idowu, A.O., T.T. Awoyemi, B.T. Omonona & A.O. Falusi (2011). Non-farm Income Diversification and Poverty among Rural Farm Households in Southwest Nigeria, *European Journal of Social Sciences*, 21(1): 163 – 176.
- Madu, I.A. (2006). Spatial inequality in Nigeria: The Imperative of Geographic Perspectives in the Development Process, *Journal of Social and Economic Development*, 8(2): 105 – 120.
- National Bureau of Statistics (NBS)(2005). Poverty Profile for Nigeria. A Publication of National Bureau of Statistics, Abuja, Nigeria.
- National Bureau of Statistics (NBS) (2006). Core Welfare Indicator Questionnaire Survey - Abia State Report. A Publication of National Bureau of Statistics, Abuja.
- National Poverty Eradication Programme (NAPEP)(2006). www.napep.org. Assessed 20/1/06.
- National Planning Commission (NPC)(2007). Population Statistics www.npc.org. Assessed. 15/01/08.
- Nwachukwu, I.N. & C.I. Ezeh (2007). Impact of Selected Rural Development Programmes on Poverty Alleviation in Ikwuano LGA, Abia State, Nigeria. *African Journal of Food, Agriculture, Nutrition and Development*, 7(5): 1 – 17.
- Odebode, S.O. (2012). Gender Issues in Agricultural Extension and Rural Development in Nigeria, Rural Development - Contemporary Issues and Practices, Dr. Rashid Solagberu Adisa (Ed.), ISBN: 978-953-51-0461-2, InTech, Available from: <http://www.intechopen.com/books/rural-development-contemporary-issuesand-practices/gender-issues-in-agricultural-extension-and-rural-development-in-Nigeria>.
- Omonona, B. (2010). Quantitative Analysis of Rural Poverty in Nigeria. Brief No. 17. Nigeria Strategy Support Programme, International Food Policy Research Institute, Washington, D.C.
- Rotary International (2006). Provision of a Water Bore hole at a State Secondary School in Aba, Abia State, Nigeria. A Project of Rotary Club of Eziukwu, Aba. Rotary International District 9140. Available at <http://matchinggrants.org/pdf/info667.pdf>
- Wilson, A.M., J.A. Wickery, A. Brown, R.H.W. Langston, D. Smallshire, S. Wottom & D. Vanhinsbergh (2010). Changes in the numbers of breeding Waders on Lowland Wet Grasslands in England and Wales Between 1982 and 2002: Capsule Lapwing, Snipe, Curlew and Redshank Decreased Significantly Between 1982 and 2002, while Over the Same Period Oystercatcher Increased, *Bird Study*, 52(1): 59 – 69.